Department of Natural Resources



DIVISION OF OIL AND GAS

550 West 7th Avenue, Suite 1100 Anchorage, AK 99501-3560 Main: 907-269-8800 Fax: 907-269-8939

March 3, 2023

Julieanna Potter Senior Environmental Specialist Hilcorp Alaska, LLC 3800 Centerpoint Drive Ste. 1400 Anchorage, Alaska 99503

RE: LOCI 17-001, Hilcorp Alaska, LLC, Ninilchik Unit, Pearl Pad, Expansion and New Wells Unit Plan of Operations Amendment Decision.

Dear Ms. Potter:

The Alaska Department of Natural Resources, Division of Oil and Gas (Division), in accordance with Alaska Statute 38.05 and Alaska Oil and Gas Leasing Regulations (11 AAC 83) grants authorization to conduct activities in support of the Ninilchik Unit (NKU) as proposed in the NKU Plan of Operations (Plan) amendment request dated January 06, 2023, for the above referenced project.

Scope:

Hilcorp Alaska, LLC (HAK) is requesting authorization to expand the existing Pearl Pad. The pad expansion would have a footprint of approximately 1.62 acres with approximately 13,120 cubic yards of gravel fill being used for the project. Additionally, HAK has proposed drilling two grass roots gas development wells (Pearl #10 and Pearl #11), one combination gas development and oil exploration well (Pearl #12), and install associated infrastructure including gas flowlines, electrical instrumentation, a line heater, and a separator. The Pearl Pad is located on private surface lands with bottom hole locations for the proposed new wells being within the Ninilchik Unit. The pad expansion would provide additional space necessary for production well drilling and increased gas production from the NKU. The expansion would have the smallest achievable footprint to allow for rig placement, associated well drilling activities, and facilities access.

Plan activities include:

- Gravel placement for pad expansion
- Drilling and well testing for Pearl #10, Pearl #11, and Pearl #12
- Installation of facility piping, electrical and instrumentation lines to tie wells into existing production infrastructure.
- Gas production from Pearl #10, Pearl #11, and Pearl #12

Location information:

NKU Pearl Pad LOCI 17-001, Hilcorp Alaska, LLC, NKU, Pearl Pad Expansion and New Wells Unit Plan of Operations Amendment Decision

Meridian: Seward Township: 001S Range: 014W Section: 23

Latitude, Longitude: 60.08178 N, -151.62788 W

Pearl #10 and Pearl #11 Bottom Hole Locations

ADL: 384372

Meridian: Seward Township: 001S Range: 014W Section: 14

Pearl Pad is located approximately four miles northeast of Ninilchik and is on privately-owned surface and subsurface lands.

Agency review:

The Division provided a review and comment opportunity for the activities considered for authorization under this decision. The following government entities were notified on January 10, 2023, for comment on the Plan: DNR: Division of Mining, Land and Water (DMLW), Alaska Department of Environmental Conservation (ADEC), Alaska Department of Fish and Game (ADF&G), the U.S. Army Corps of Engineers (USACE), the U.S. Fish and Wildlife Service (USFWS) and the Kenai Peninsula Borough (KPB). ADF&G provided a comment; no other comments were received. See Appendix A for the agency comment and responses.

Public Notice:

Public notice of the Plan and opportunity to comment was provided on the State of Alaska's online public notice website and the Division's website on January 24, 2023. Public notice was published in the Anchorage Daily News on January 30, 2023, and February 13, 2023, and the Peninsula Clarion on January 31, 2023, and February 14, 2023. Additionally, a copy of the public notice was faxed to the Clam Gulch and Ninilchik Post Offices. The deadline for comments was February 23, 2023, at 4:30 pm Alaska time. Comments were submitted. See Appendix B for the public comments and responses.

Conditions/Stipulations:

The Division has determined that to protect the State's interest, it is necessary to incorporate the 2018 Cook Inlet Mitigation Measures. HAK addressed these mitigation measures in the application process.

The Cook Inlet Mitigation Measures allow for the Division to grant an exception if the applicant shows that compliance with the measure is not practicable or that the applicant will undertake an equal or better alternative to satisfy the intent of the mitigation measure. HAK seeks an exception to the mitigation measure discussed below.

Cook Inlet Mitigation Measure: A.1.c.

The siting of onshore facilities, other than roads, docks, utility or pipeline corridors, or terminal facilities will be prohibited within one-half mile of the mean high water of Cook Inlet, except where land use plans classify an area for development, or established usage and use history show development. Facilities may be sited within these buffers if the lessee demonstrates to the satisfaction of the director, in consultation with ADF&G, that site locations outside these buffers are not practicable or that a location inside the buffer is environmentally preferred.

HAK provided the below request and explanation for the exception:

Mitigation measure waiver is requested: The proposed Pearl Pad will be located within one-half mile of the mean high water of Cook Inlet. The coastline near Ninilchik, Alaska has multiple active gas production facilities. Pearl Pad is sited approximately one mile from Paxton Pad, the nearest active gas production facility. Gas exploration and production is an established land usage in the Ninilchik area.

The intent of this mitigation measure is to protect important fisheries from liquid hydrocarbon releases, which Hilcorp feels it can successfully do within the ½ mile buffer from the mean high-water line of Cook Inlet due to the proposed sequence of exploration activities, and by utilizing current well control technology and proven best management practices while drilling. The Primary target of the Pearl #12 well is Gas and the only identified target for the Pearl #12 well is gas. The Pearl #12 well will ultimately extend beyond anticipated gas zones to explore for oil. While drilling, Hilcorp will maintain multiple barriers of protection against well control events including, but not limited to, hydrostatic overbalance of estimated reservoir pressure, and Blow-Out Prevention Equipment (BOPE). Additionally, an intermediate casing string will be set and cemented inplace between the gas zones and potential oil-bearing zones, providing the ability to shut in the well at depth without any potential for liquid hydrocarbons to return to surface. Well control and well safety related aspects of the drilling program are permitted with the Alaska Oil and Gas Conservation Commission (AOGCC) to ensure operations follow all safety controls and regulatory measures that have been developed to mitigate the risks of an uncontrolled well event.

During drilling, temporary fuel tanks and produced water storage tanks will be placed within lined, bermed secondary containment areas to reduce risk of an off-pad release. In addition, the pad will be constructed with a 2-foot berm around the entire pad perimeter to further reduce risk of hydrocarbon-impacted runoff. Only stormwater will be discharged from Pearl Pad and all such discharges will adhere to stormwater pollution prevention regulations under the Clean Water Act. No point source or direct discharges to the drainage bordering the south end of the parcel will occur and no hydrocarbon or chemical discharges are authorized or planned. Hilcorp adheres to state and federal regulations governing pollution prevention and has a robust integrity management program dedicated to preventing releases. Should an unplanned release occur, Hilcorp follows internal and local, state, and federal agency protocols for spill reporting and response to ensure potential impacts are minimized. Hilcorp also maintains a contract and close working relationship with Cook Inlet Spill Prevention & Response, Inc. (CISPRI) to ensure Hilcorp's internal spill response capabilities can be augmented timely and efficiently for the protection of people, the environment, and property. Proposed activities at Pearl Pad will not affect Cook Inlet or access to Cook Inlet recreation areas.

The intent of this measure, in addition to protecting important fisheries as HAK mentioned in their request, is to protect and minimize impacts to sensitive riparian, river, coastal, and marine environments as well as current surface drinking water sources and to reduce habitat loss through erosion or other disturbances from facility construction and placement. The Division acknowledges that gas exploration and development is an established land use in the Ninilchik area. Subsurface oil and gas leases in the Ninilchik area were starting to be issued in the early 1980's. HAK has shown rationale that compliance with the measure is not practicable while minimizing overall pad footprint and impacts to wetlands in

LOCI 17-001, Hilcorp Alaska, LLC, NKU, Pearl Pad Expansion and New Wells Unit Plan of Operations Amendment Decision

the area. HAK has provided sufficient operating procedures designed to prevent and mitigate any potential risk of a liquid hydrocarbon release. The Division grants an exception to this mitigation measure to allow for the Applicants alternative as set forth in the Plan. This exception does not apply to activities that the Applicant may propose in future or amended plans of operations.

As stated in the agency comment submitted by ADF&G (Appendix A), Pearl Pad is approximately less than 300 feet to the Mean-High-Water mark and the start of the Clam Gulch Critical Habitat Area. Coastal bluff erosion is a concern for native shellfish management and public access to those resources. In response to this the Division is requesting an annual coastal bluff erosion report performed by a third party for the Pearl Pad site documenting erosion rates of the top and lower bluff and any significant loss of vegetation. This request will be considered an operating procedure designed to prevent or minimize adverse effects on other natural resources and other uses of the unit area and adjacent areas.

A certified As-Built survey of the activity shall be provided within one year of placement of the improvement. This As-Built must contain a hard copy, as well as a digital GIS file containing a Shapefile or ESRI Feature Class.

Please attach this amendment approval with the original decision. This Unit Plan of Operations amendment approval is issued in accordance with Alaska Statute 38.05, Alaska Administrative Codes 11 AAC 83.346 and 11 AAC 83.303. The Division reviewed this amendment under the unit regulation for the Plan, 11 AAC 83.346, and considers the factors set forth in 11 AAC 83.303(a) and (b). The amendment was also evaluated against the NKU agreement for conformance.

This approval signifies only that the State of Alaska has no objection to the operations outlined in the Plan amendment application. It does not constitute certification of any property right or land status claimed by the applicant, nor does it relieve the applicant of responsibility to obtain approvals or permits from other persons or governmental agencies that may also be required. All stipulations contained in the original lease and subsequent Plan approvals remain in full force and effect.

If activities have not commenced, this approval expires on March 3, 2026. Failure to comply with the terms and conditions outlined in the lease, the attached stipulations, and this authorization may result in revocation of this unit operations approval.

Any questions or concerns about this amendment may be directed to Natural Resource Specialist Ashley Ethridge at 907-269-8815 or emailed to ashley.ethridge@alaska.gov.

LOCI 17-001, Hilcorp Alaska, LLC, NKU, Pearl Pad Expansion and New Wells Unit Plan of Operations Amendment Decision

Sincerely,

DocuSigned by:

2846043C8317495..

Graham Smith

Petroleum Land Manager

A person affected by this decision may appeal it, in accordance with 11 AAC 02. Any appeal must be received within 20 calendar days after the date of "issuance" of this decision, as defined in 11 AAC 02.040(c) and (d) and may be mailed or delivered to the Commissioner, Department of Natural Resources, 550 W. 7th Avenue, Suite 1400, Anchorage, Alaska 99501; faxed to 1-907-269-8918, or sent by electronic mail to dnr.appeals@alaska.gov. Under 11 AAC 02.030, appeals and requests for reconsideration filed under 11 AAC 02 must be accompanied by the fee established in 11 AAC 05.160(d)(1)(F), which has been set at \$200 under the provisions of 11 AAC 05.160 (a) and (b). This decision takes effect immediately. If no appeal is filed by the appeal deadline, this decision becomes a final administrative order and decision of the department on the 31st calendar day after issuance. An eligible person must first appeal this decision in accordance with 11 AAC 02 before appealing this decision to Superior Court. A copy of 11 AAC 02 may be obtained from any regional information office of the Department of Natural Resources.

Attachments: Figures 1-7

Appendix A: Agency Comments Appendix B: Public Comments

Appendix C: Potential Impacts to Coastal Bluff

2018 Cook Inlet Mitigation Measures

ecc: DOG: Ashley Ethridge, Rebecca Marks, James Hyun, Alex Zinck, Molly Fenton, Hayley

Beitel, SPCO Records, and DOG Units

DMLW: Clifford Larson, Henry Brooks, SAIL

ADF&G: Ronald Benkert, Tony Munter

ADEC: DEC Agency Reviews and DEC Water Oil and Gas

KPB: Marcus Mueller

Other: USACE, USFWS, and Patricia Waggoner

Appendix A: Agency Comments

ADF&G comment:

ADF&G has no objection to the Pearl Pad expansion or the tidewater exemption but do recommend maintaining a minimum 150-foot vegetative buffer from soil disturbance to the top of the bluff. The current Pearl Pad is approximately less than 300-feet to the Mean-High-Water (MHW) mark and the start of the Clam Gulch Critical Habitat Area. Coastal bluff erosion is a concern for native shellfish management and public access to those resources.

Hilcorp response:

Hilcorp recognizes the proximity of the proposed pad expansion to Cook Inlet and the nearby Clam Gulch Critical Habitat Area. The proposed expansion edge is in-line with the existing pad and was selected to reach subsurface resource targets while minimizing the overall pad footprint and impact to wetlands. Hilcorp operators and/or contractors are physically onsite at Pearl Pad at least twice per day. As a standard practice, any evidence of pad instability would be brought to the attention of the area Operations Manager and Construction Manager as soon as it is identified to be of concern. At that time, the potential need for intervention or remedial actions will be evaluated.

Division response:

See Appendix C

Appendix B: Public Comments

The below comments were submitted by Patricia Waggoner, Ninilchik.

Comment 1:

If Pearl #12 does find oil, how will Hilcorp transport oil from the site.

Hilcorp response:

The proposed project includes a combination gas development and oil exploration well. Hilcorp does not currently have plans to produce oil from Pearl Pad. If oil is identified at commercial quantities, potential methods for oil production and subsequent transport from Pearl Pad will be evaluated.

Division response:

Comment noted.

Comment 2:

What is the proposed "future gas production facility infrastructure"? While "No new buildings are proposed as part of this application." Will the new infrastructure be needed as the new wells in this application are brought online. What is the anticipated footprint of the facility and will the facility require additional pad expansion.

Hilcorp response:

Infrastructure required to bring the proposed wells online include well cellars, conductors, on-pad flowlines, and associated tie-in infrastructure to include line heaters and separators. Hilcorp understands this comment to reference Section VII.2 of the application and acknowledges the typographical error identified by the commenter. This section of the application should read as follows:

"Hilcorp will tie the new wells into existing and proposed gas production facility infrastructure located on Pearl Pad. No new buildings currently are proposed as part of this application."

Division response:

Comment noted.

Comment 3:

While the material site for the pad expansion is not identified in the application, if the Spencer Property Material Site (co-located on the same parcel as the Paxton Pad) is selected, please provide additional information regarding to slope stability at the Paxton Pad since the Pad is build to the top of the slope above the material site.

Hilcorp response:

Hilcorp currently does not plan to use the Spencer Property Material Site as part of the proposed project.

Division response:

Comment noted.

Comment 4:

Traffic safety of these trucks entering and exiting the Paxton and Pearl pad is a concern. The entrance to the Pearl Pad is on a blind corner of the Sterling Highway. Does Hilcorp propose any traffic control measures as part of this project.

Hilcorp response:

Hilcorp requires all employees and contractors to comply with applicable traffic laws. Hilcorp will work with the Department of Transportation to evaluate the traffic plan and current road conditions to ensure public safety. Additionally, the roadways where trucks enter and exit the Sterling Highway will be sanded as necessary.

Division response:

Comment noted.

Comment 5:

The applicant states that "all equipment will be maintained to minimize... noise." In response to my email to ADNR equipment noise (back-up alarms) during the Paxton Pad Expansion, "The equipment you are hearing is from contractor vehicles who do not have the same white noise alarms installed as those utilized during drilling." All equipment, including subcontractors should have equipment to minimize emissions and noise. This should include equipment and trucks used during the production phase.

Hilcorp response:

Hilcorp acknowledges all noise from onsite equipment cannot be eliminated during construction, drilling, and production. Hilcorp is committed to safely and responsibly developing natural gas resources in the Kenai area and works hard to minimize sound impacts to the extent practicable. Except where safety concerns dictate otherwise, the typical use of loudspeakers to communicate are replaced by handheld radios. When practical, vehicles and heavy equipment will use broadband "white noise" backup alarms, instead of the typical louder single-tone backup alarms. Audible alarms and natural gas venting during process upsets at the facility are required under state regulation.

Division response:

The Division responds promptly to public concerns and will continue to address any concerns that may arise. Hilcorp has promptly responded to noise concerns that have been brought to their attention that were able to be mitigated in a safe manner.

Comment 6:

In the application it states, "Sound impacts will be temporary and will occur primarily during construction and drilling." The proposed schedule is 5 ½ months of "temporary" sound impacts between the Paxton and Pearl projects during just the 24/7 drilling phase. Additional noise impacts occur due to trucks and equipment during construction, equipment and venting to bring the wells on-line. This extends the "temporary" noise impacts to well over 8 months as currently scheduled. There are extensive studies on the negative impacts to human health from disruption of sleep and stress caused by industrial noise.

Hilcorp response:

All schedules included in the application are "proposed" and remain fluid based on a multitude of factors, including permitting timelines, well priority, rig scheduling, rig availability based on preceding projects, material availability, contractor availability, construction schedules, seasonal and environmental constraints, and imposed agency restriction periods.

Although Hilcorp strives to be as precise as possible when submitting permits, due to the above listed factors, exact scheduling is not always feasible at the time of application submittal. Currently, Hilcorp anticipates that pre-rig construction activities at the Pearl Pad will be conducted from 3/1/23 to 4/1/23. Drilling operations at Paxton Pad are anticipated from 3/10/23 to 4/10/23 and Pearl Pad from 4/10/23 to 6/1/23. Cumulative timeframe for drilling and construction activities at Pearl and Paxton Pads is anticipated from 3/10/23 to 6/2/23.

Division response:

Comment noted.

Comment 7:

Sheet 4 of 5 of the Pearl Pad Expansion indicates that the edge of the pad is approximately 40' from a steep bluff. The Bluff slumped significantly in the past. What assurances that drilling as close as 40' from the top of a steep bluff will maintain integrity of the slope? What effects will moving the intermittent stream to the northern edge of the property have on the slumped bluff an associated erosion.

Hilcorp response:

The physical footprint of the drilling rig does not allow for a wellbore to be placed at the proposed pad edge adjacent to the bluff. The proposed expansion edge is in-line with the existing pad and was selected to reach subsurface resource targets while minimizing the overall pad footprint and impact to wetlands. Hilcorp operators and/or contractors are physically onsite at Pearl Pad at least twice per day. As a standard practice, any evidence of pad instability would be brought to the attention of the Area Operations Manager and Construction Manager as soon as it

is identified. At that time, the potential need for intervention or remedial actions will be evaluated.

Division response:

See Appendix C

Final Division response to public comments:

The Division recommends Hilcorp provide a form of outreach to property owners adjacent to the project area to address any safety concerns and further questions they may have in regard to the project.

Appendix C: Potential Impacts to Coastal Bluff

During the adjudication process concerns of potential impacts to the adjacent coastal bluff have been articulated. In addition to the project specific monitoring stipulation described in the decision document, the Division requested that a more detailed description of the coastal bluff assessment process be submitted in response to the concerns. Below is the Hilcorp response to the request.

The proposed Pearl Pad expansion was designed by McLane Consulting, Inc. (McLane). During project planning, McLane performed an extensive field topographic survey of the area. This topographic survey was then validated by aerial imagery. The area shaded purple on the attached "Existing Conditions & Demo Plan" exhibit (Figure 1) was determined to be stable and vegetated with large trees. In addition, this area includes a lower bench/swale that serves as the drainage for the nearby wetlands and water seeps from the pad area. The limits of the lower bench/swale area are defined by a second bluff edge, depicted by a heavy, dashed red line in the exhibit, which marks the current limits of active erosion. This bluff edge descends steeply to the toe of the bluff/top of beach and is sparsely vegetated.

Historical orthomosaic imagery was also evaluated from the years 1996, 2006, 2011, 2019, and 2021. The review of this data indicated that the top bluff edge in the area adjacent to the pad expansion has been relative stable and vegetated for at least the past 27 years with little to no erosion evident. The lower bluff edge was observed to be actively eroding but is located at least 93 feet from the existing pad and proposed expansion limits. The relative stability of the area adjacent to the pad expansion is also validated by the presence of heavy vegetation and mature trees extending from 90 to 140 feet from the toe of the existing pad and proposed expansion. This vegetation and trees are evident in photos of the area provided.

The proposed pad expansion will include vegetation removal no closer than 15 feet from the top bluff edge but will not remove the heavy vegetation extending thru the lower bench/swale area to the limit of active erosion. Based on the historical east Cook Inlet bluff erosion rate of approximately 1 foot per year, the lower bluff erosion was not determined to be a significant concern in the near- and medium-term future (approximately 40 years). Furthermore, Hilcorp operators and/or contractors are physically onsite at Pearl Pad at least twice per day. As a standard practice, any evidence of pad instability will be brought to the attention of the area Operations Manager and Construction Manager as soon as identified. At that time, the potential need for intervention or remedial actions will be evaluated.

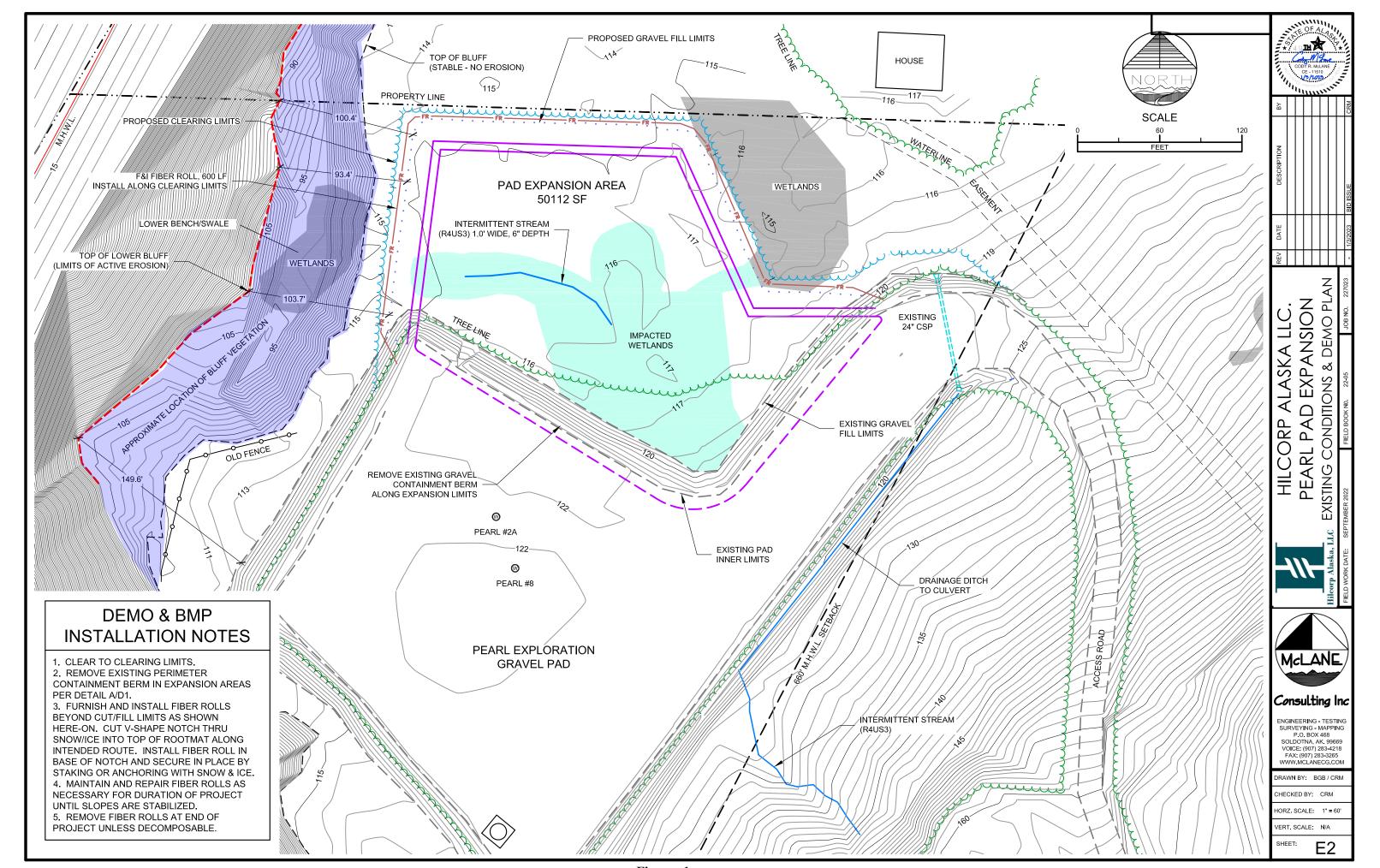
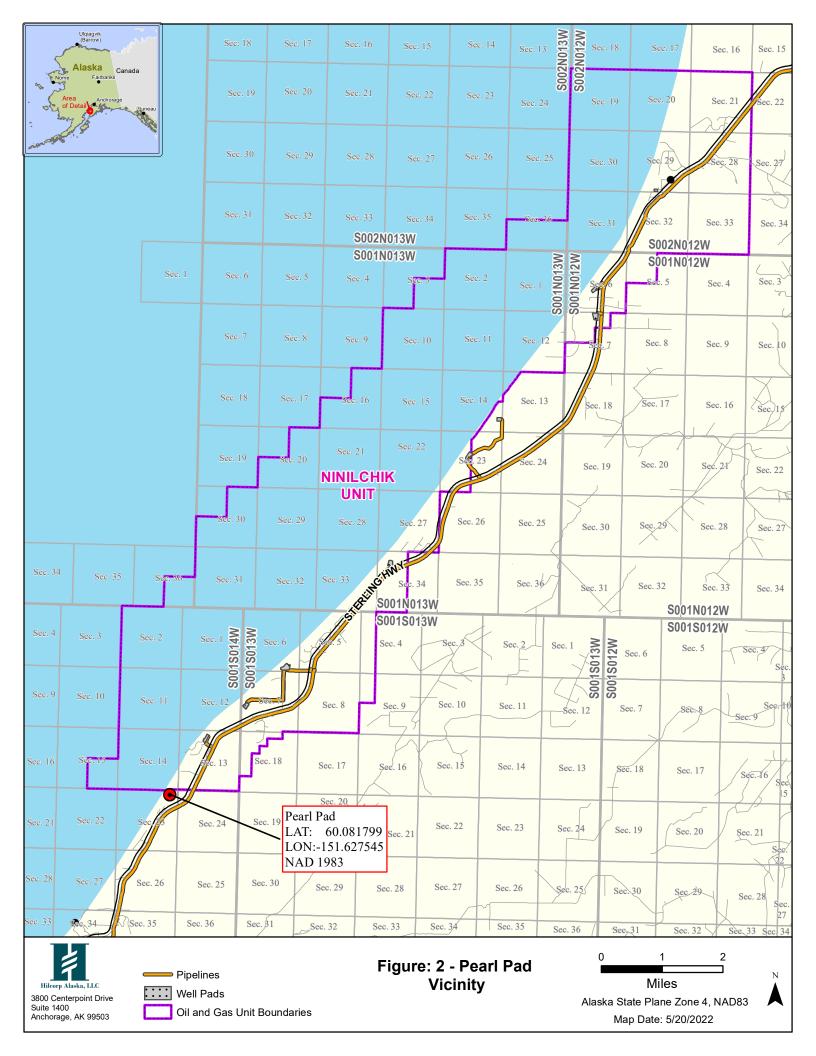
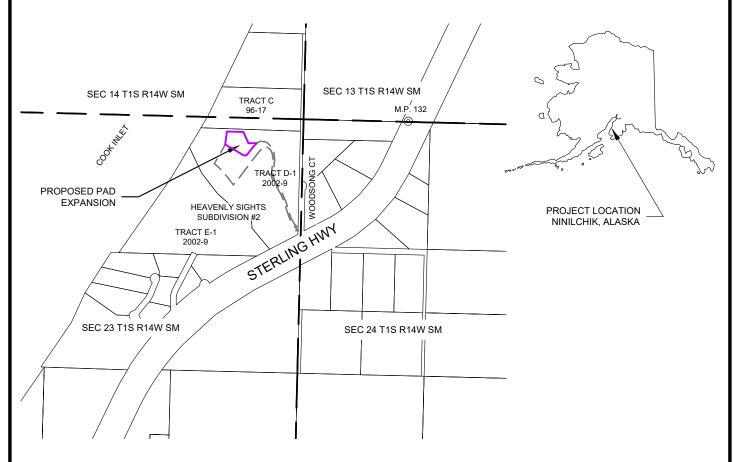
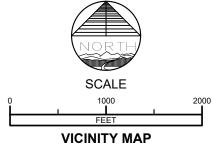


Figure: 1



HILCORP ALASKA, LLC PEARL PAD EXPANSION





INDEX OF SHEETS

	SHEET NO.	DESCRIPTION
	1	COVER
	2	IMPACT SUMMARY
	3	EXISTING CONDITIONS / DEMO
	4	PLAN VIEW
	5	TYPICAL SECTIONS



ENGINEERING - TESTING SURVEYING - MAPPING P.O. BOX 468 SOLDOTNA, AK. 99669 VOICE: (907) 283-4218 FAX: (907) 283-3265 WWW.MCLANECG.COM LOCATIO

SECTION 23, T1S, R14W, S.M., AK

PROJEC

PEARL PAD EXPANSION

APPLICANTS

HILCORP ALASKA

3800 CENTERPOINT DRIVE, STE. 100, ANCHORAGE, AK 99503



REVISION: DATE: 9/29/2022
DRAWN BY: BGB
SCALE: 1" = 1000'
PROJECT NO. 227023
SHEET

1 OF 5

Figure: 3

PROJECT IMPACT SUMMARY:

IMPACT AREAS

TOTAL PROJECT FOOTPRINT: 70,483 SF USEABLE PAD EXPANSION AREA: 50,112 SF CLEARING AREA: 70,483 SF

WETLAND FILL IMPACT AREA: 20,917 SF (0.4802 ACRES)

INTERMITTENT STREAM FILL IMPACT: 120 LF

FILL VOLUMES

TOTAL PROJECT GRAVEL FILL VOLUME: 13,120 CY
TOTAL WETLANDS GRAVEL FILL VOLUME: 5,129 CY
INTERMITTENT STREAM GRAVEL FILL VOLUME: 3 CY
(BASED ON MEAN 12" CHANNEL WIDTH & 6" DEPTH)
WETLANDS MEAN FILL DEPTH: 6.6 FT ±





ENGINEERING - TESTING SURVEYING - MAPPING P.O. BOX 468 SOLDOTNA, AK. 99669 VOICE: (907) 283-4218 FAX: (907) 283-3265 WWW.MCLANECG.COM LOCATION

SECTION 23, T1S, R14W, S.M., AK

ROJECT

PEARL PAD EXPANSION

APPLICANTS

HILCORP ALASKA

3800 CENTERPOINT DRIVE, STE. 100, ANCHORAGE, AK 99503



REVISION: 2

DATE: 11/10/2022

DRAWN BY: BGB

SCALE: N/A

PROJECT NO. 227023

SHEET

2 of 5

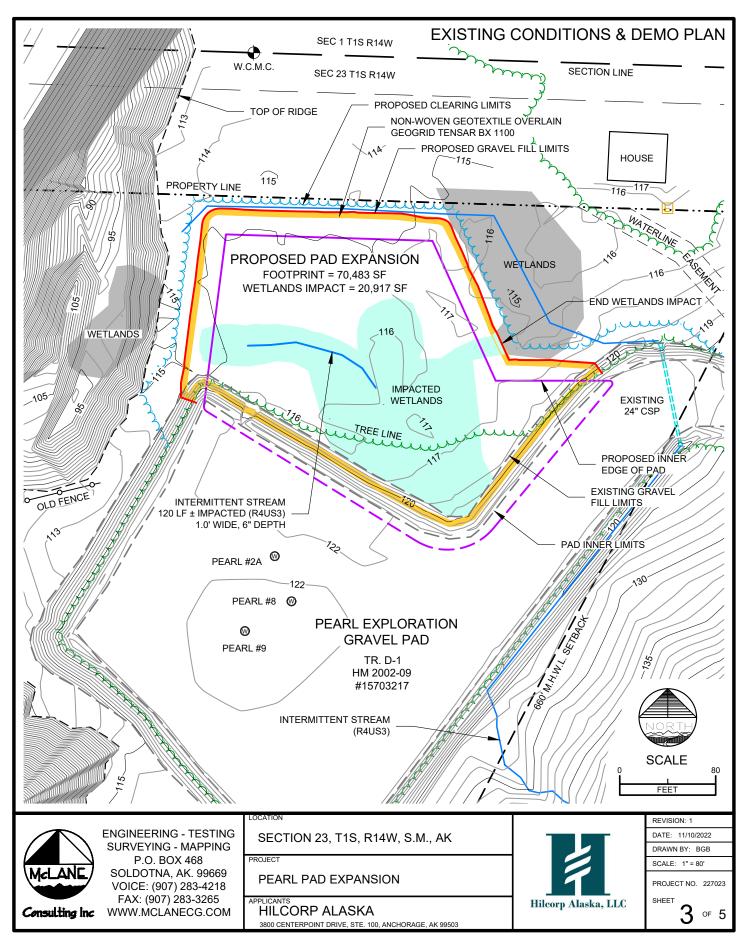


Figure: 5

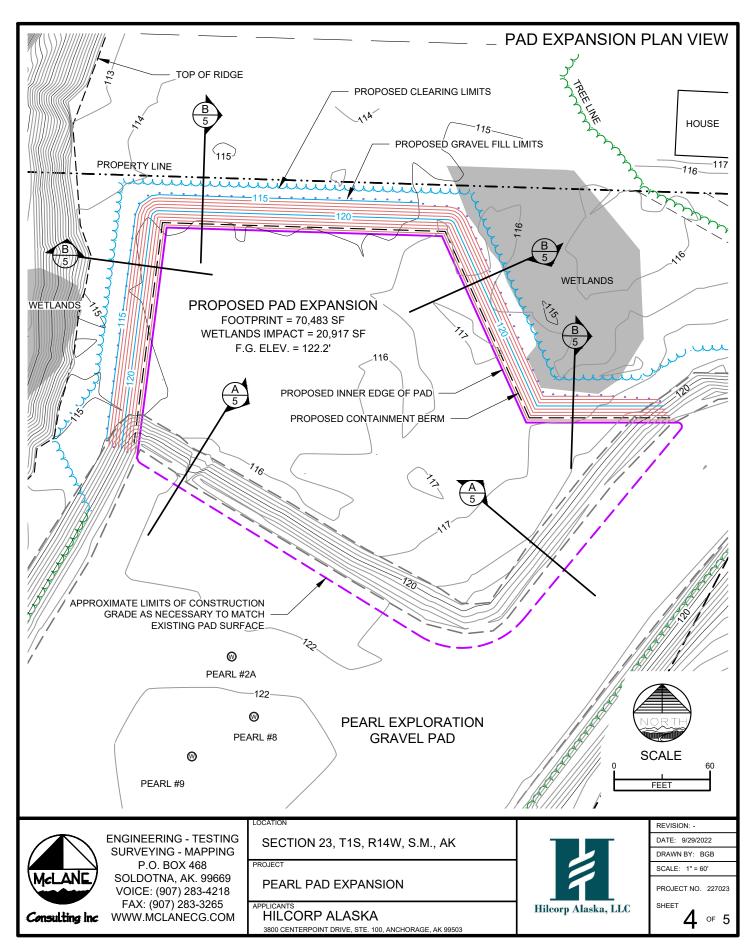


Figure: 6

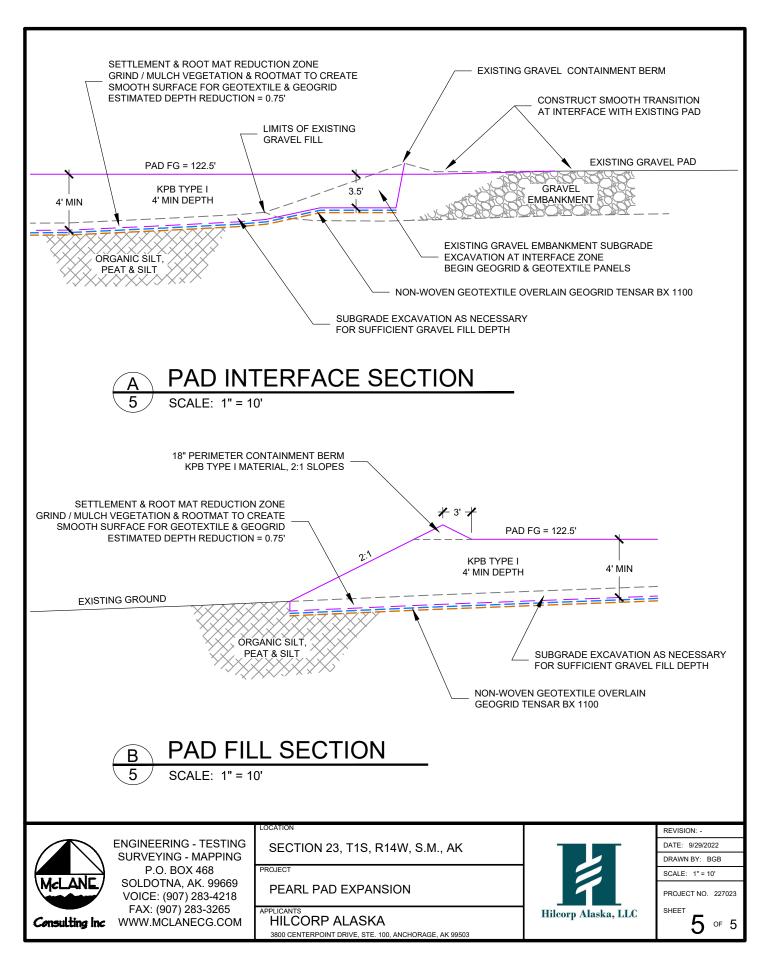


Figure: 7